

Summary of Cancer Incidence and Mortality for Zip Codes 29301 & 29306 (Spartanburg, SC)

Cancer Incidence in Zip Codes 29301 & 29306

The first step in the analysis of cancer data for zip codes 29301 and 29306 was to look at the number of new cancer cases diagnosed in each zip code and compare this to the number of cancer cases expected (see Tables 1 & 3). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Tables 1 and 3 show what types of cancer occurred in each zip code from 1996-1999, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 466 new cases of cancer were diagnosed in zip code 29301, while 518 cases were expected. A total of 227 new cancer cases occurred in zip code 29306, while 296 cases were expected. The most common types of cancer in both zip codes were prostate, lung, female breast, and colorectal cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

Analyses did not reveal any specific types of cancer where the number of new cases that occurred was significantly higher than expected.

Cancer Deaths in Zip Codes 29301 & 29306

To assess cancer deaths in these zip codes, cancer mortality data from 1996-2000 were used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Tables 2 and 4 show the number of cancer deaths that occurred and the number expected in each zip code. A total of 272 cancer deaths occurred in zip code 29301, while 303 deaths were expected. A total of 154 cancer deaths occurred in zip code 29306, while 179 deaths were expected. Therefore, fewer cancer deaths occurred than expected in each zip code.

Analyses did not reveal any specific types of cancer where the number of cancer deaths that occurred was significantly higher than expected.

Conclusions

To summarize, fewer cancer cases and cancer deaths occurred than expected in zip codes 29301 and 29306. There were no significant excesses seen among the types of cancer that occurred in these zip codes.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer, such as brain cancer, rather than more common cancers, like lung or prostate cancer. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29301 or zip code 29306.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:

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Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29301, 1996-1999

<u>Cancer Site*</u>	<u>Observed No. of Cases</u>	<u>Expected No. of Cases**</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest***</u>
Prostate	78	82.0	0.95	0.19
Lung/Bronchus	75	81.1	0.92	0.47
Breast (Female)	88	78.3	1.12	1.20
Colon/Rectum	47	59.6	0.79	2.66
Bladder	23	20.3	1.13	0.36
Melanoma	13	18.1	0.72	1.42
Non-Hodgkin's Lymphoma	11	17.0	0.65	2.13
Oral/Pharynx	20	15.0	1.33	1.63
Kidney/Renal Pelvis	4	13.1	0.30	6.36
Uterus	11	12.7	0.87	0.23
Pancreas	10	11.6	0.86	0.22
Leukemia	8	10.1	0.79	0.45
Ovary	8	8.7	0.92	0.05
Stomach	5	8.2	0.61	1.23
Cervix	6	7.4	0.81	0.26
Brain/CNS	5	7.2	0.69	0.67
Esophagus	8	7.1	1.12	0.11
Larynx	6	6.4	0.93	0.03
Multiple Myeloma	4	5.8	0.69	0.57
Thyroid	4	5.6	0.71	0.48
All Sites	466	518.4	0.90	5.29

Table 2. Analysis of Cancer Deaths in Zip Code 29301, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths**</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest***</u>
Lung/Bronchus	78	88.3	0.88	1.20
Colon/Rectum	27	29.9	0.90	0.28
Breast (Female)	23	22.7	1.01	0.00
Prostate	11	19.6	0.56	3.81
Pancreas	16	16.6	0.96	0.02
Non-Hodgkin's Lymphoma	12	10.9	1.10	0.10
Leukemia	13	10.7	1.21	0.49
Brain/CNS	6	7.8	0.77	0.40
Stomach	9	7.7	1.18	0.24
Esophagus	6	7.4	0.81	0.27
Ovary	10	7.0	1.43	1.29
Multiple Myeloma	7	7.0	1.01	0.00
Kidney/Renal Pelvis	7	6.2	1.13	0.11
Oral/Pharynx	6	5.8	1.03	0.01
Liver	2	5.8	0.35	2.47
Bladder	4	5.7	0.71	0.49
All Sites	272	302.5	0.90	3.08

*Excludes in situ cases of cancer to allow for comparison.

**Excludes cancer sites with less than 5 cancer cases or deaths expected due to the unreliability of statistical tests based on small numbers.

***The Chi-Square statistical test determines if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases/deaths is significantly different from the expected number of cases/deaths.

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Table 3. Analysis of New Cancer Cases in Zip Code 29306, 1996-1999

<u>Cancer Site*</u>	<u>Observed No. of Cases</u>	<u>Expected No. of Cases**</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest***</u>
Breast (Female)	32	47.3	0.68	4.93
Lung/Bronchus	43	46.6	0.92	0.28
Prostate	41	41.2	1.00	0.00
Colon/Rectum	34	34.9	0.97	0.02
Bladder	6	12.0	0.50	2.98
Melanoma	4	9.8	0.41	3.41
Non-Hodgkin's Lymphoma	7	9.7	0.72	0.75
Oral/Pharynx	9	8.3	1.08	0.06
Uterus	5	7.8	0.64	1.03
Kidney/Renal Pelvis	3	7.4	0.41	2.62
Pancreas	1	6.9	0.15	5.02
Leukemia	3	5.9	0.51	1.43
Ovary	2	5.3	0.38	2.05
All Sites	227	295.6	0.77	15.94

Table 4. Analysis of Cancer Deaths in Zip Code 29306, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths**</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest***</u>
Lung/Bronchus	53	51.3	1.03	0.05
Colon/Rectum	12	18.1	0.66	2.06
Breast (Female)	13	14.2	0.92	0.10
Prostate	16	10.9	1.47	2.36
Pancreas	9	10.0	0.90	0.09
Non-Hodgkin's Lymphoma	4	6.5	0.61	0.98
Leukemia	3	6.5	0.46	1.87
All Sites	154	179.1	0.86	3.51

*Excludes in situ cases of cancer to allow for comparison.

**Excludes cancer sites with less than 5 cancer cases or deaths expected due to the unreliability of statistical tests based on small numbers.

***The Chi-Square statistical test determines if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases/deaths is significantly different from the expected number of cases/deaths.

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